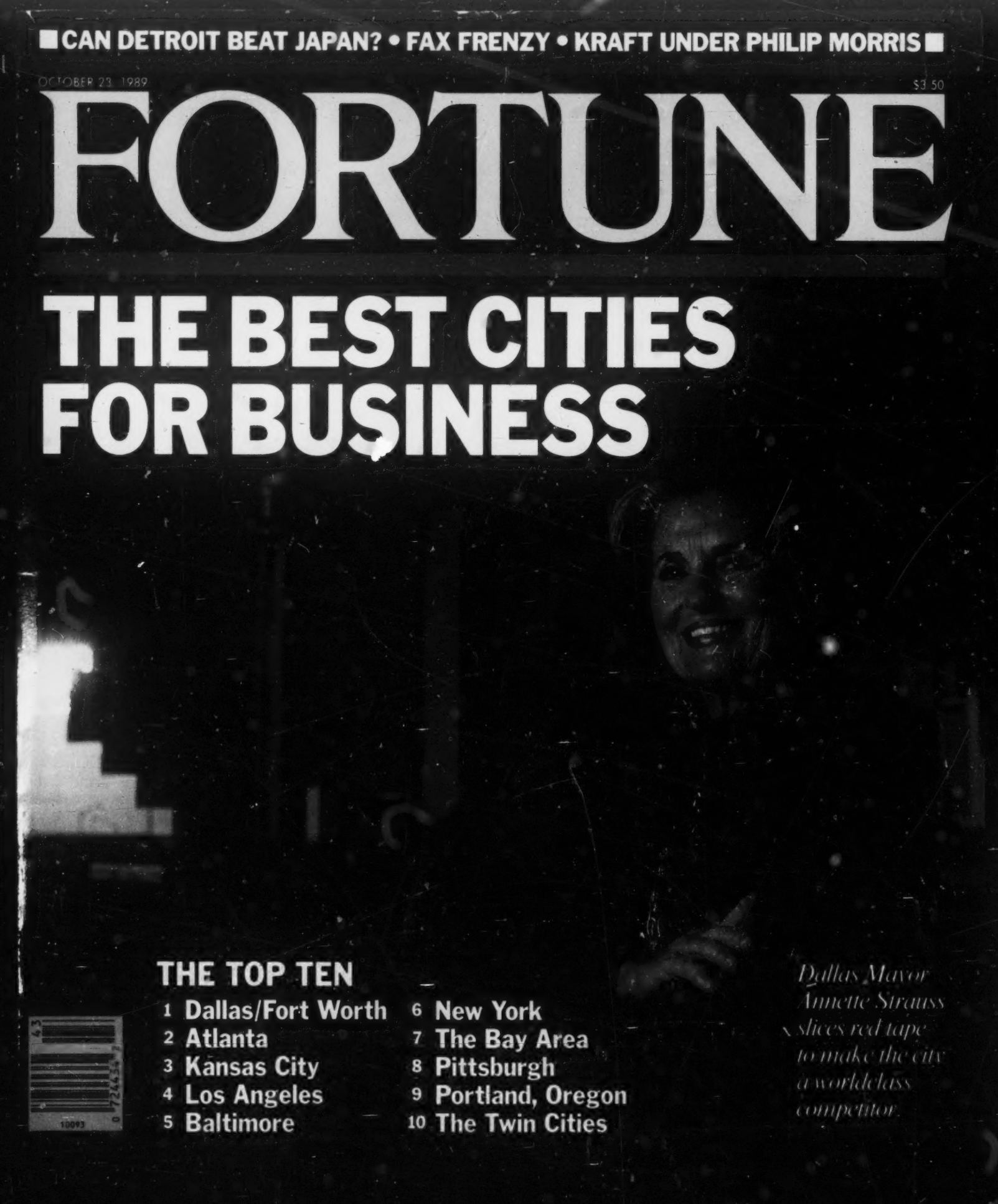
■ CAN DETROIT BEAT JAPAN? • FAX FRENZY • KRAFT UNDER PHILIP MORRIS ■

OCTOBER 23, 1989 $3.50

FORTUNE

THE BEST CITIES FOR BUSINESS



THE TOP TEN

1 Dallas/Fort Worth
2 Atlanta
3 Kansas City
4 Los Angeles
5 Baltimore
6 New York
7 The Bay Area
8 Pittsburgh
9 Portland, Oregon
10 The Twin Cities

Dallas Mayor Annette Strauss slices red tape to make the city a worldclass competitor.

OCTOBER 23, 1989

FORTUNE

Baltimore's historic waterfront has become a big draw for locals as well as tourists.

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ABOVE: Rhoda Baer photographed Fell's Point in Baltimore, No. 5 on FORTUNE's list of the best cities for business.

COVER: Mayor Annette Strauss was photographed against the Dallas skyline by Steven Pumphrey.

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THE BEST CITIES FOR BUSINESS 56

Five requirements make a top location. Heading the list: skilled labor. Two Sunbelt centers have the edge, but other areas are coming back. *by Kenneth Labich*

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"We're trying to show that this is the age where Nippon Steel is associated with actresses."

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"I want the business community to know we want them here and you don't have to bribe anybody to get things done."

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"The harsh reality is that the Japanese can do an all-new vehicle faster [than we can]."

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"I don't feel bad about selling people products they don't need."

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"Having constant sales is just like taking dope. First you start with 10% off, then it's 15%..."

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"I believe in practicing the S.O.B.'s golden rule: *Expect others to do unto you what you would do to them.*"

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Maybe you've never heard of Dillard's. Like Wal-Mart, it is family-run, highly computerized, extremely competitive, great for investors, and based in Arkansas. Founder William Dillard, 75, visits 167 stores a year and says there's really nothing he'd rather do. *by Susan Caminiti*

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EDITOR'S DESK

ANDY FREEBERG

The cities crew, clockwise from lower right: Lawrence, Eckstein, Labich, Caminiti, Blank, Gannes, Kirkpatrick

WHAT'S THE BEST ole town in the U.S.A.?" asked real estate man George F. Babbitt in Sinclair Lewis's famous novel. Predictable answer: his own hometown. "It's evident to anyone with a head for facts that Zenith is the finest example of American life and prosperity to be found anywhere."

The problem, as business people considering relocation discover, is that the facts are tough to pin down. Says senior editor John Lawrence, who supervised our cover stories on America's best cities for business: "Most efforts to compare the attractiveness of cities avoid hard analysis. They are long on anecdotes but short on statistics."

Not FORTUNE's. For as long as two months Lawrence, associate editor David Kirkpatrick, and reporters Susan Caminiti and J. B. Blank have been working with experts from the corporate relocation consulting firm of Moran Stahl & Boyer to develop true apples-to-apples comparisons of the 31 biggest U.S. metropolitan areas. The results are based on government data and information gathered from major employers and city officials. For a quick take on your own Zenith—labor supply, infrastructure, economic base, relative cost, and quality of life—look at the tables at the end of the package created by designer Linda Eckstein.

In preparing the lead story, which begins on page 56, writer Kenneth Labich interviewed government and business chiefs in highly rated Dallas/Fort Worth and Atlanta. "Leaders of these communities are very pragmatic about what it takes to attract new businesses," he says. "The mayors run decidedly pro-business administrations, offering everything from tax incentives to free economic planning for enterprises looking to move to their towns." Their timing couldn't be better. Last year more than 80% of the FORTUNE 500 chief executives said they expected to relocate some plants or offices.

Companies that do decide to move are attracted increasingly to midsize cities with well-educated labor forces. Writer Stuart Gannes uncovers five such up-and-comers, including some sleeper choices. Says Gannes: "Not only are these towns attractive to employers, but they also offer affordable housing, shorter commutes, and a lower cost of living than many larger cities."

Marshall Loeb

MANAGING EDITOR

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But Columbia needs help. It made only $21 million on sales of $1.6 billion for the fiscal year ended February 1989. Meanwhile, CBS Records—an uneven performer when Sony bought it for $2 billion in 1989—is making huge profits.

– David J. Morrow

Morita: Hollywood splashdown

ADD $10 TO THE PRITZKER BILLIONS

■ **Hyatt Hotels** closed its Chicago headquarters for a day in late September and dispatched its 375 corporate employees to the chain's 98 inns around the country to make beds, carry luggage, and otherwise get to meet paying guests and hotel employees. Among those to hit the road: President Thomas Pritzker, 39, whose family controls the hotels. His father, billionaire Jay Pritzker, heads a huge private empire with interests in manufacturing and real estate.

The younger Pritzker spent a day at the Grand Hyatt in Washington, D.C., working 90-minute shifts as a bellhop, cafeteria server, and deli counterman. Says he of his hands on toil: "It was a lot more fun than sitting in an office." Another extra: "I got about $10 in tips."

– Colin Leinster

JUNK: THE WEAK AND THE STRONG

■ Like jello, the $200 billion junk-bond market jiggled these past few weeks but didn't break. It was already trembling from the summer defaults of **Resorts International** and **Southmark** when **Campeau**, the Canadian parent of Allied Stores and Federated Department Stores, admitted it was so short of cash it could not pay for merchandise to put on the racks. Then **Olympia & York**, the Toronto real estate powerhouse owned by the Reichmann family, came to the rescue with a $250 million loan.

Where will the next bad news come from? One study reveals both frailty and relative robustness among 20 of the largest junk-bond debtors. The chart above, compiled by McCarthy Crisanti & Maffei, a high-yield research service in New York, shows a melting pot: former investment-grade issuers that have slunk into junk on operating disasters (**Long Island Lighting**), as well as companies leveraged up from buyouts (**Southland**) and recapitalizations (**Harcourt Brace Jovanovich**).

WHO'S ON TOP OF THE JUNK HEAP

ISSUER	JUNK BONDS in billions	ESTIMATED DEFAULT RISK 2 years	ESTIMATED DEFAULT RISK 5 years	RECENT PRICE percent of face value	CHANGE 8/31 to 9/27
RJR Holdings	$14.9	2	4	103.0	–4.5
Long Island Lighting	$3.9	1	3	103.0	–0.5
Owens-Illinois	$2.9	1	4	96.0	–4.5
Quantum Chemical	$2.1	2	5	96.0	–4.0
Southland	$1.7	3	6	52.0	–22.0
SCI Holdings	$1.7	2	4	108.0	–1.5
Wickes	$1.6	3	6	68.0	+3.0
Safeway Stores	$1.6	2	4	101.5	–1.5
Fort Howard	$1.6	2	5	99.5	–3.0
Union Carbide	$1.6	1	2	96.0	–2.0
Harcourt Brace Jovanovich	$1.6	2	5	102.0	–2.0
E-II Holdings	$1.5	4	6	67.0	–3.0
R.H. Macy	$1.5	2	4	102.5	–1.5
USG	$1.5	3	5	86.0	–12.0
Federated Dept. Stores	$1.4	6	7	62.0	–21.0
Allied Stores	$1.4	6	7	40.0	–11.0
National Gypsum	$1.0	3	5	70.0	–4.0
Burlington Holdings	$1.0	2	5	104.0	–2.5
American Standard	$1.0	2	5	102.0	–2.0
Interco	$0.8	5	6	57.0	–4.0

SOURCE: MCCARTHY CRISANTI & MAFFEI

A default risk of one is safe; seven means a 75% chance of default.

The researchers looked at such vital financial signs as sources of emergency funds and the amount of interest expenses covered by cash flow. They rated the companies for default risk over the next two years—assuming a recession in 1990, an assumption FORTUNE does not share—and the next five years. A rating of one represents a 1% chance of default, while a seven packs a nerve-jangling 75% risk.

Union Carbide, whose ratings straddle the Maginot line between investment-grade bonds and junk, is low on the default scale because it generates 4½ times the cash needed for its annual interest payments. Allied and Federated, on the other hand, are flashing sevens for the next five years despite Campeau's recent reprieve. Also looking shaky is **E-II Holdings**, a spinoff from the old Beatrice. E-II, now controlled by retailing magnate Meshulam Riklis, has one of the group's lowest ratios of cash flow to interest expense.

Some junk bonds have recovered from the Campeau crisis. But most are down a bit, partly because a lot of new offerings are hanging over the market. The prices shown on the table are for actively traded issues selected from each company's basket of bonds. Mark Walsh, Morgan Stanley's chief of high-yield research, sizes up the recent damage: "There was no hurricane." **– Susan E. Kuhn**

Thomas Pritzker as bellhop: having a lot more fun than usual

BANKS TO BRADY: DROP DEAD

■ By sharply boosting reserves to cover loans to Third World countries, **Manufacturers Hanover**, **Chase Manhattan**, and

Unocal extracts oil from shale brought in from its Colorado mine.

J.P. Morgan seem to be out to scuttle Treasury Secretary Nicholas Brady's plan to reduce Third World debt. Says James J. McDermott Jr., research director at Keefe Bruyette & Woods: "The banks are really throwing down the gauntlet."

Brady recently met with the chairmen of several banks, including Lewis Preston of Morgan and Willard Butcher of Chase. But he apparently failed to persuade them to lend new money to Third World countries while at the same time forgiving billions in debt.

Instead the banks have put their cash into reserves to protect themselves against possible defaults. Some analysts believe the banks are playing hardball to force the U.S. government into guaranteeing the new loans, which it refuses to do.

Morgan, which took a hit on third-quarter earnings to boost reserves by $2 billion, now has an extraordinary 100% reserve ratio to medium- and long-term debt to less-developed countries, or LDCs (see chart). Now the bank could even drop its support of the IMF, the World Bank, and government programs to bail out the Third World. Chase and Manny Hanny have also increased their reserves, and **BankAmerica**, Chemical, and **Citicorp** are expected to follow suit.– **D.J.M.**

BANK EXPOSURES

	LDC LOANS $ billions	PERCENT IN RESERVE
CITICORP	8.9	29%
BANKAMERICA	7.4	37%
MANUFACTURERS HANOVER	6.7	36%
CHASE MANHATTAN	6.2	46%
CHEMICAL	4.4	28%
BANKERS TRUST N.Y.	3.1	32%
J.P. MORGAN	2.8	100%

Brady: Banks aren't buying his solution to Third World debt.

HERE'S TO SHALE OIL (AGAIN)

■ Some people never quit. After petroleum prices spiked in the Seventies, big oil companies rushed to develop vast new energy sources like oil shale. Then prices leveled, and one by one the companies sold these projects or shut them down. All except **Unocal**, which for five years has been trying to perfect a small demonstration processing plant at Parachute Creek, Colorado.

This year, says Chairman Richard Stegemeier, the operation is approaching breakeven. But it's a funny sort of "even." The plant has been crushing more than 10,000 tons of rock a day to produce about 6,800 barrels of synthetic crude. The plant runs at 70% of capacity, and Unocal says that it needs 90% to cover operating costs.

The company gets $52 a barrel for the shale oil it produces. The oil goes to a refinery and is particularly valued as a source for jet and diesel fuel. But the refinery pays only some $25 a barrel on average. The other $27 or so is paid by the federal government. The price support runs for up to ten years or $400 million, whichever comes first. So far three years and about $60 million of the taxpayers' money have gone by.

Unocal's shareholders have spent far more. The company has written off more than $650 million invested in the pursuit of shale oil since the 1950s. Operating losses at Parachute Creek in 1988 were about $50 million. This year, says Stegemeier, they should be less than $10 million.

Why is Stegemeier so persistent? "This is a technology for the early part of the next century," he says. "We want to have it on the shelf." Also, Unocal has about three billion barrels of shale oil reserves, about four times its reserves of crude. These guys are either heroically dogged—or just plain fond of dogs. **– Peter Nulty**

A FAIRER SHAKE FOR SOUTHERN BABIES

■ It's no secret that the U.S. rates for infant mortality are among the highest in the Western world. In 1987 ten U.S. infants died for every 1,000 born alive; 17 developed countries have lower rates. In the South 12 infants die per 1,000.

Now executives from a number of corporations with Southern operations—**Du Pont**, **Florida National Bank**, **Marion Laboratories**, **Southwestern Bell**, **Tenneco**, and **Burlington Industries**—are pushing ahead with a coalition to drive these statistics down by promoting free prenatal care and educational programs in the workplace.

They still lag behind their counterparts in the North and West, who, says John Schlitt, a research associate of the Southern Regional Project on Infant Mortality, "tend to provide more help and education to workers." The **Oster/Sunbeam Appliance** plant in Louisiana started teaching pregnant women about prenatal care in

A Sunbeam mother-to-be

FORTUNE'S TOP TEN CITIES

Most of America's best metropolitan areas are distinguished by a talented work force, strong business leadership, and an ability to accommodate further growth. ■ *by David Kirkpatrick*

EVERY CITY has particular charms: If you are a fanatic about frozen custard, you may never be happy anywhere except Milwaukee. But to rank America's top ten cities for business, FORTUNE sought objective criteria that take account of today's preeminent location factors, notably the availability of qualified workers.

We began with a ranking of the 31 largest metropolitan areas, based on the opinions of the CEOs of the country's biggest corporations; these were compiled by Cushman & Wakefield, the business real estate firm. We next asked Moran Stahl & Boyer, corporate location consultants, to develop a statistical profile of each of the 31 cities that would not only describe today's conditions, but also could help predict tomorrow's. FORTUNE then used the data and our own judgment to rank the top ten.

The ten are geographically diverse, and the best city in each major region was certain to make the list. Portland, Oregon, edged out Seattle, another undeniably attractive Northwestern location. Portland has better tamed the no-growth crowd, and its economy doesn't rely so much on one employer as Seattle does on Boeing. Similarly, Baltimore outclassed Philadelphia even though by many measures the two are comparable. But Baltimore's infrastructure is in better shape, and the local leadership is more effective.

Moran Stahl & Boyer developed two proprietary indexes that make comparisons easier. The labor market stress index measures the relationship between supply and demand for labor, compared with the U.S. average. The higher the score, the tighter the labor market (U.S.=100). MS&B measured, for example, growth of employment compared with growth in labor supply since 1983. Where work force growth is lagging, a tightening labor market is in prospect, raising the index number. A city with lower-than-average unemployment also gets a higher score, as do areas where wages are rising rapidly or where the decline in 18- to 24-year-olds by 1994 is projected to be greater than the U.S. average. The fiscal stress index measures several indicators of state and local finance, including rate of growth in taxes, government bond ratings, and local government debt per capita.

Following the top ten cities, we list the remaining 21 in alphabetical order. For a detailed statistical breakdown on all 31 cities, see page 92. The data are calculated for each metropolitan area, which generally includes surrounding communities. The figure for corporate headquarters covers companies listed in both the FORTUNE 500 and the FORTUNE Service 500.

CHARLES THATCHER

DALLAS/FORT WORTH

Population	3,864,000
Total population growth 1980-89	24.2%
Cost of living index*	94
Labor market stress index*	93
Fiscal stress index*	109
FORTUNE 500 corp. headquarters	34
Unemployment rate*	5.8%

1 Don't think J.R., don't think Cowboys, and *please* don't mention the Kennedy assassination. Think incipient boomtown. The so-called Metroplex, embracing the suburbs and the area between the cities, is today's dream location for business, largely because of surplus office and factory space in the wake of the oil bust. Dallas has a 28% vacancy rate for commercial space (Fort Worth, however, has less than half that much available). Talented workers with a wide range of skills are just waiting for a call, and population growth (up 30% in Dallas in the last ten years) will support continued economic expansion. Dallas spends a relatively high $5,000 per pupil in its city schools, and as a result, SAT scores average a respectable 800. Highways and water and sewer systems are in fine shape. With no corporate or personal income taxes in Texas, the overall tax burden is low, though increasing. MS&B gives Fort Worth an A for work ethic and Dallas a B. Downtown Dallas is the financial capital of the Southwest by day. By night it lights up: Nightclubs flourish in the West End and Deep Ellum districts.

*Data for Dallas only.

ANN STATES-SABA

ATLANTA

Population	2,804,000
Total population growth 1980-89	31.1%
Cost of living index	97
Labor market stress index	100
Fiscal stress index	118
FORTUNE 500 corp. headquarters	20
Unemployment rate	5.7%

2 This is the city that defines the New South. Top executives polled by Cushman & Wakefield rated it as the most desirable city for business in the U.S. Downtown looks better than ever, with Underground Atlanta—a glitzy, refurbished, and expanded tourist-oriented mall—booming. Despite all the growth, Greater Atlanta remains the most densely wooded metropolitan area in the country. Salaries and other costs are below those of many Northern cities, and there's plenty of space for expansion. A median-price existing home goes for only $82,440. On a scale of 100 for the nation, living costs are at 97. In-migration should support continued employment growth, though the city's attractiveness could be threatened unless it gets a grip on its crime rate, by some measures the worst in the country. Property crime was up 45% from 1984 to 1988. A worrisome contrast in income and educational attainment remains between the suburbs and inner city, where SAT scores average only 720, among the lowest of the major cities. But the region is one of the few with growth in the number of young workers.

Sources: Population data—National Planning Data Corp.; cost of living index—Economic Research Institute, Newport Beach, California. Unemployment rate shown is for June 1989.

DAVID E. KLUTHO

KANSAS CITY

Population	1,586,000
Total population growth 1980-89	10.6%
Cost of living index	95
Labor market stress index	93
Fiscal stress index	82
FORTUNE 500 corp. headquarters	6
Unemployment rate	5.5%

3 The coastal set may not think of it as up to date, but the surprise is how much is here and what a pleasant place it can be. It's a city of fountains, museums, Frank Lloyd Wright houses, and the elegant Country Club Plaza, one of the country's finest shopping areas. There's a swath of blight and poverty, but even the poor neighborhoods are spacious and green. A hub for agriculture-related industry, the city is rapidly diversifying. Hallmark has played a major role in rejuvenating the downtown, but this is no one-business city and corporate leaders take a strong interest in civic affairs. There's an excellent work ethic, and for those who want to be close to the job, pleasant housing in center city. Public transit is lacking; commute times run anywhere from 15 to 50 minutes from major suburbs. Technical and professional labor is in good supply. The mid-continent location makes K.C. a top candidate for distribution centers. Housing is affordable. Tax and debt burdens are relatively low. A $50,000 salary here is the equivalent in spending power to $70,500 for a Manhattanite. Besides that, the ribs are great.

ALAN D. LEVERSON

LOS ANGELES*

Population	8,804,000
Total population growth 1980-89	17.7%
Cost of living index	138
Labor market stress index	73
Fiscal stress index	118
FORTUNE 500 corp. headquarters	26
Unemployment rate	5.0%

4 What much of the country sees as La-La Land, business increasingly sees as location land. Abundant labor and access to the hot Pacific Rim are the main draws. But with increasing highway congestion, a stubborn air-pollution problem, and risk of a water shortage, continued growth will bring continued stress. Proposed air-quality regulations extend even to deodorants. The immigrant population, eager to find jobs, continues to burgeon. The number of young labor-force entrants will drop only 4% in the next five years, less than in most cities. The city's prime location and huge market offset the high cost of operating there. But fiscal stress is generally high, as are housing prices: Median prices for existing homes, now at $204,099, are second only to those in San Francisco among major cities. Commute times in this consummate car town can be interminable, though the seemingly ubiquitous cellular phones help keep drivers in touch with the office. A vigorous cultural scene is developing. And for those who like boats, or beaches, or hiking and skiing in the mountains, this is the best of the big cities.

*Data for Los Angeles County.

RHODA BAER

BALTIMORE

Population	2,358,000
Total population growth 1980-89	7.2%
Cost of living index	115
Labor market stress index	107
Fiscal stress index	109
FORTUNE 500 corp. headquarters	6
Unemployment rate	4.8%

5 After years of quiet decay, Baltimore has created something worth stopping and staying for on the run between New York City and Washington, D.C. The most compelling signs of change are in the Inner Harbor, where a dramatically situated aquarium, opened in 1981, and many places to eat and shop have helped spur a commercial and residential renaissance. Now pristine hotels and offices abound there. With a major port and fine transportation, this is an attractive alternative to nearby metropolises, offering East Coast location at much lower cost. The median-price home is only $93,462, in contrast with $145,409 in D.C. Highways, bridges, and sewers are in good shape for an older city; the economy is diverse, and the people are cosmopolitan. It is a city of close-knit neighborhoods that have been sustained by publicly financed renovation and a middle class returning to town. Violent crime fell 4.4% from 1984 to 1988. Inner city education is a problem: SAT scores average 754, nearly 200 points lower than in the suburbs. The student/teacher ratio in town is 37, vs. 18 in the outlying schools.

NINA BARNETT

NEW YORK*

Population	8,618,000
Total population growth 1980-89	4.2%
Cost of living index	134
Labor market stress index	87
Fiscal stress index	182
FORTUNE 500 corp. headquarters	110
Unemployment rate	5.0%

6 Love it or hate it, there's nothing like it. Nobody claims that costs aren't high, but many businesses can't care—they have no choice but to be in the Big Apple. It's still the world capital of communication, finance, and the arts, among many other businesses. Expansion is notoriously difficult. The cost of business construction is the highest in the country by a considerable margin. The typical monthly business electric bill is $11,341; no other city even reaches five digits. Salaries in almost every category are highest here. With the median-price house selling for $185,541, pay to attract talent can hardly stop rising. The labor force is low in quality though tantalizingly huge. "New York could be *the* place for business if it could just do something about its public education," says Dennis Donovan, senior vice president of MS&B. Highways are potholed and congested, commutes are long, and taxes are high. And forget about finding a taxi in the rain. Still, nearly one in ten of the FORTUNE 500 industrial companies and one in eight of the service companies are headquartered in the five boroughs.

*Data for city plus Westchester, Rockland, and Putnam counties.

JOHN HARDING

THE BAY AREA

Population	6,118,000
Total population growth 1980-89	38.2%
Cost of living index*	133
Labor market stress index*	87
Fiscal stress index*	109
FORTUNE 500 corp. headquarters	27
Unemployment rate*	3.7%

7 For businesses that need highly educated workers who in turn demand a quality living and working environment, this is a prime location. While the bloom is temporarily off rapid expansion in the computer industry, centered near San Jose, 40 miles southeast of the Golden Gate, high-tech entrepreneurship has attracted a core of talent that will aid the region's economy. Finance-oriented San Francisco may suffer growing pains while San Jose becomes the bigger city. In-migration should support future job creation throughout the area, including Oakland. The cost of living is a third higher than for the nation, and housing prices rank No. 1—but few cities can compete in terms of culture and recreation. Mass transit is an asset, including the Bay Area Rapid Transit system from the East Bay, but highways are overloaded. Environmental activism complicates development efforts. The fact that San Francisco led the country in smoking restrictions, comparable worth raises for government workers, and child-care centers for office workers may put off some employers—but it draws employees.

*Data for San Francisco only.

JIM SCHAEB—VIEW FINDER

PITTSBURGH

Population	2,087,000
Total population growth 1980-89	−6.0%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	118
FORTUNE 500 corp. headquarters	16
Unemployment rate	4.7%

8 Nothing used to say Pittsburgh more than long rows of smokestacks belching foul smoke. Today the city has lower levels of the toxic pollutant sulfur dioxide than Baltimore, Chicago, or New York City. The decline of the steel industry allowed Pittsburgh to literally clean up its act. Now it is highly rated as a place to live. Thousands of new jobs have been created in medicine, biotech, and financial services. The turnaround took extensive cooperation between business and government, and benefited from a strong work ethic and help from Carnegie Mellon and other local universities. While Pittsburgh is still losing population, MS&B believes it will start gaining as the economy revives even further, becoming a center for divisional headquarters, with its work force well trained in professional and technical skills. Business costs are lower than in the Northeast, yet that market is within easy reach. Median cost of a house: $64,183, lowest on the list of 31. Highways are more than adequate, with most commutes under 30 minutes. And Pittsburgh has more golf courses per capita than any other U.S. city.

C. BRUCE FORSTER

PORTLAND

Population	1,199,000
Total population growth 1980-89	8.5%
Cost of living index	100
Labor market stress index	107
Fiscal stress index	155
FORTUNE 500 corp. headquarters	8
Unemployment rate	4.3%

9 Mount Hood looms overhead, a constant reminder of the nature so beloved by the city's legions of environmentalists. Their views also loom large here: An ordinance prohibits new houses from casting excessive shadows on their neighbors'. But a once pervasive no-growth mentality is dissipating, and a newly well-organized group of civic activists promotes development. Downtown has revived and boasts innovative architecture. Quality of life is consistently rated high, despite the nation's highest bank robbery rate (often attributed to the region's characteristically airy and inviting bank offices). Housing costs are among the lowest on the West Coast, averaging $75,760, vs. $204,099 in Los Angeles. The work ethic is excellent even though many workers need occasional sprees among the trees. A highly educated work force—Oregon has one of the nation's strongest public school systems—has recently drawn high-tech companies. Wages and energy costs are low. Portland's highways are ample. Experts anticipate an influx of Californians fed up with high costs, jammed freeways, and bad air.

STEVE WOIT

MINNEAPOLIS/ST. PAUL

Population	2,414,000
Total population growth 1980-89	13.0%
Cost of living index	104
Labor market stress index	107
Fiscal stress index	145
FORTUNE 500 corp. headquarters	27
Unemployment rate	4.4%

10 To say the Twin Cities have come back is misleading, because they were never very far down. Quality of life is a major attraction. The area has the highest educational attainment (SAT scores in Minneapolis city schools average 1,002) of all the 31 places studied, with little differential between the city and suburbs. The work ethic is strong, perhaps due to all those Lutheran Scandinavians who flocked here in the 19th century. Unemployment is low, but as growth continues, MS&B expects many homesick former residents with professional and technical skills to return, preventing a labor squeeze. Operating costs are well below those of Chicago and the Northeast. Energy costs are among the lowest of the areas surveyed. Housing is easily available, and the price is reasonable: The median for a single-family dwelling is $93,223. Air service is good, with congestion rated low by MS&B and not expected to increase appreciably through 1997. Crime is also low—only 86% of the all-city average. About the only negatives: frigid winters and heavy tax burdens—the area has a big fiscal-stress-index number.

THE REST OF THE MAJOR CITIES

BOSTON

Population	2,861,000
Total population growth 1980-89	2.0%
Cost of living index	130
Labor market stress index	140
Fiscal stress index	109
FORTUNE 500 corp. headquarters	12
Unemployment rate	3.4%

Growth has not been banned in Boston, but it's a problem. The city was one of the great urban revival stories, thanks largely to the high-tech and finance industries. But the labor market now is excruciatingly tight. Business costs in general are second only to New York's. Poor fiscal management clouds the future, and high housing prices slow in-migration. Creative redevelopment continues downtown, including a project with four office towers and housing.

CHICAGO

Population	6,242,000
Total population growth 1980-89	3.0%
Cost of living index	99
Labor market stress index	113
Fiscal stress index	100
FORTUNE 500 corp. headquarters	42
Unemployment rate	5.4%

A megacenter of well-known attributes, Chicago is less attractive now for companies needing a Midwest location than other cities that are less expensive and more manageable in scale. Even within the area, suburban business centers are competing effectively with the center city, where relative educational weakness is also a concern. But Chicago's art, music, innovative architecture (for example, the sparkling new United terminal at O'Hare) will keep it cooking.

CINCINNATI

Population	1,459,000
Total population growth 1980-89	4.1%
Cost of living index	98
Labor market stress index	127
Fiscal stress index	91
FORTUNE 500 corp. headquarters	16
Unemployment rate	5.0%

The city's reputation is growing. With clean, tree-lined streets, a riverfront location, moderate business costs, and a strongly work-oriented citizenry, Cincinnati has always been attractive for business. Longtime resident Procter & Gamble built an elegant new office complex in 1985. Quality of life is fine, especially in the numerous distinct neighborhoods defined by the hills that surround the city—like Mount Adams, which has 19th-century houses on steep, narrow lanes.

CLEVELAND

Population	1,857,000
Total population growth 1980-89	−2.2%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	100
FORTUNE 500 corp. headquarters	14
Unemployment rate	5.0%

Twenty years after the Cuyahoga River caught fire, pike and bluegill now swim there and restaurants line its banks. The vastly cleaner water serves as a metaphor for the rebound. While old heavy industrial plants remain shuttered, smaller companies, many of them technology-oriented, are springing up. Often they start with the aid of an important local business consortium put together by leaders of the old-line corporations. Assets: low costs, a quality labor supply.

COLUMBUS

Population	1,351,000
Total population growth 1980-89	8.6%
Cost of living index	101
Labor market stress index	127
Fiscal stress index	91
FORTUNE 500 corp. headquarters	6
Unemployment rate	5.0%

A quiet town with solid credentials: excellent educational system and attainment levels, a large finance, banking, and insurance industry, and the government of Ohio. Its mayor has taken a strong stand against drugs, and community leaders, including Leslie Wexner, chairman of the Limited, give strong support to the arts. After rapid job growth in recent years, the labor market shows signs of stress. The main problem: Demand for workers is outstripping supply.

DENVER

Population	1,662,000
Total population growth 1980-89	16.4%
Cost of living index	102
Labor market stress index	93
Fiscal stress index	109
FORTUNE 500 corp. headquarters	4
Unemployment rate	6.3%

With employment growing more slowly than population and housing prices down 15% since 1987, Denver's loss could be a company's gain. The well-trained but underemployed work force doesn't want to leave its Rocky Mountain home. It is expected to rebound as a regional center; the city should benefit from increased trade with Canada. Finance, services, and distribution should prosper. In May development-minded voters approved a badly needed new airport.

DETROIT

Population	4,381,000
Total population growth 1980-89	−2.4%
Cost of living index	103
Labor market stress index	87
Fiscal stress index	118
FORTUNE 500 corp. headquarters	8
Unemployment rate	7.6%

More than ten years ago, Renaissance Center was supposed to ignite a downtown revival. It hasn't. The disparity between impoverished and undereducated Detroit and its better-off suburbs is still a major challenge for city leaders. The cyclical auto industry's still-dominant status means Detroit is more subject than most cities to economic cycles. A pool of trained workers remains in the vicinity, though many are used to high car-factory wages.

HOUSTON

Population	3,229,000
Total population growth 1980-89	18.0%
Cost of living index	93
Labor market stress index	80
Fiscal stress index	109
FORTUNE 500 corp. headquarters	23
Unemployment rate	6.3%

The worst is clearly over, but it will take time to revive fully from the oil bust that cost the city over 200,000 jobs. Yet the resulting low real estate prices and abundance of skilled labor are genuine pluses today. Still the largest city in Texas, it has many advantages: a bustling port, a vital cultural life, work force diversity. The city is loaded with pleasures, like the new de Menil Collection, an art museum drawing raves worldwide. But taxes may become a problem.

MIAMI

Population	1,828,000
Total population growth 1980-89	12.4%
Cost of living index	102
Labor market stress index	93
Fiscal stress index	82
FORTUNE 500 corp. headquarters	8
Unemployment rate	6.7%

A city hung over by a major image problem, largely due to the drug trade. Even tourism is threatened by the perception, considerably overblown, of constant shootouts and unregenerate drugging. Recent racial rioting hasn't helped. Only New Orleans is seen as less attractive for business by executives polled by Cushman & Wakefield. But the climate and a robust international culture remain major attractions. One asset is its financial links to Latin America.

MILWAUKEE

Population	1,404,000
Total population growth 1980-89	0.5%
Cost of living index	102
Labor market stress index	127
Fiscal stress index	109
FORTUNE 500 corp. headquarters	7
Unemployment rate	4.4%

A recent contest to pick a civic symbol led one cynic to suggest a sign, "Chicago—90 Miles." In the end, the whole project was abandoned. Inferiority complex aside, the city is reviving, with impressive new glass towers going up next to massive 19th-century structures. Affordable housing, uncongested highways, and top-quality utilities and services contribute to generally lower costs than in other Midwest locations, though tax rates are on the steep side.

NEW ORLEANS

Population	1,303,000
Total population growth 1980-89	3.7%
Cost of living index	94
Labor market stress index	80
Fiscal stress index	145
FORTUNE 500 corp. headquarters	5
Unemployment rate	8.6%

The local culture is so distinct that conventioning Republicans last year joked about needing a U.S. embassy. But while tourism is a bright spot, local government isn't. Ineffective leadership has dampened incentives for business growth. As its share of the nation's port traffic declines and the energy business languishes, New Orleans struggles to diversify. Crime rates and education are a severe problem. State and local fiscal problems seem never-ending.

NORFOLK

Population	1,403,000
Total population growth 1980-89	21.0%
Cost of living index	102
Labor market stress index	87
Fiscal stress index	109
FORTUNE 500 corp. headquarters	2
Unemployment rate	4.3%

Moderate costs and overall livability mark this sleeper of a city. Business hasn't fully discovered its charms, which include moderate costs and near-Northeast location. It is still home to the Navy's Atlantic Fleet, but otherwise the harbor hardly looks the same: The popular Waterside Complex of shops, restaurants, and bars stands where an abandoned dock had been. Port facilities have been continually upgraded. Getting from suburbs to work can take 12 minutes.

PHILADELPHIA

Population	4,930,000
Total population growth 1980-89	4.5%
Cost of living index	112
Labor market stress index	107
Fiscal stress index	127
FORTUNE 500 corp. headquarters	15
Unemployment rate	4.0%

The present here is not so rich as the past, but William Penn's city is perking up. It is too often remembered for a wandering shipful of garbage a few years back rather than for the inviting urban landscape and expanding skyline. Quality of life is excellent, with fine museums and restaurants and one of the greenest downtowns in America. Housing is affordable (a home costs $115,399). Impressive projects are polishing the city's image. A near miss from the top ten.

PHOENIX

Population	2,086,000
Total population growth 1980-89	38.2%
Cost of living index	101
Labor market stress index	120
Fiscal stress index	127
FORTUNE 500 corp. headquarters	7
Unemployment rate	4.5%

Hot in every way. It's one of the fastest-growing large cities, and costs of doing business are lower than for West Coast locations. Big attractions: a strong middle class and no dramatic extremes of wealth and poverty, a moderate cost of living with some of the least-expensive housing in the U.S., plenty of room for corporate expansion. Still, growth may outrun work force availability unless in-migration, already high, accelerates. Water supply is a concern.

SACRAMENTO

Population	1,402,000
Total population growth 1980-89	27.4%
Cost of living index	107
Labor market stress index	73
Fiscal stress index	118
FORTUNE 500 corp. headquarters	0
Unemployment rate	5.3%

A once sleepy state capital rapidly becoming a high-tech center. A restored historic district near the business core recreates an 1850s gold rush ambiance. Sacramento increasingly is seen as an alternative to coastal cities, where business and housing costs are higher. The educational system is adequate, and income is balanced between city and suburbs. Challenges: attracting enough new workers, building roads and expanding public services to match the growth.

SAN ANTONIO

Population	1,343,000
Total population growth 1980-89	25.3%
Cost of living index	88
Labor market stress index	73
Fiscal stress index	109
FORTUNE 500 corp. headquarters	4
Unemployment rate	7.9%

Remember the Alamo—if you can find it in the bustling middle of San Antonio. This colorful city with a lovely river winding through its center is a seductive location. Ex-mayor Henry Cisneros helped create a pro-business atmosphere before leaving office this year. Living costs are the lowest of the 31 cities, business costs below average. Population growth means plenty of workers, but training and proficiency in English are a problem. Military presence lends stability.

SAN DIEGO

Population	2,403,000
Total population growth 1980-89	29.1%
Cost of living index	118
Labor market stress index	80
Fiscal stress index	118
FORTUNE 500 corp. headquarters	4
Unemployment rate	4.3%

Nothing horrifies San Diegans more than the prospect that their city may come to resemble Los Angeles, but that's the way it's headed. A widespread perception that it represents the best of California gives San Diego the fastest-growing economy among the 31 cities as it diversifies from being a Navy and retirement town. Large in-migration keeps labor market stress low but strains freeways and other infrastructure. Costs are high, yet lower than L.A.'s.

SEATTLE

Population	1,869,000
Total population growth 1980-89	16.3%
Cost of living index	101
Labor market stress index	100
Fiscal stress index	118
FORTUNE 500 corp. headquarters	8
Unemployment rate	4.4%

It's no secret that Seattle is a great place to live, but recent popularity bred problems. An influx of people overtaxed services. That led to so much construction downtown that some began calling it Little Beirut because the place looked so torn up. Now many residents are more focused on slowing down than speeding up, as they indicated this spring by overwhelmingly voting to restrict development. But the "Gateway to the Orient" has a bright future.

ST. LOUIS

Population	2,492,000
Total population growth 1980-89	4.8%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	100
FORTUNE 500 corp. headquarters	15
Unemployment rate	5.5%

Despite the renovated Union Station (now a mall) and the new St. Louis Centre (an even bigger mall), and the ever visible Arch, a perception lingers that this isn't a happening town. Yet the city's very centrality remains a major asset. Its airport is among the best. The economy is robust and diverse. The work ethic is strong in the area, and based on SAT scores, suburban schools are among the nation's strongest. Education in the center city lags suburban schools.

TAMPA BAY AREA

Population	2,051,000
Total population growth 1980-89	27.1%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	100
FORTUNE 500 corp. headquarters	3
Unemployment rate	5.2%

Tampa's rise has been so meteoric that many out-of-staters still don't know where it is. In fact the Tampa Bay area, including St. Petersburg and Clearwater, has become the largest metropolitan area in Florida and the state's busiest port. It is consistently rated among the best cities for business (No. 5 this year) by executives polled by Cushman & Wakefield. New arrivals create a large labor pool. Caution: Rapid growth is taxing the regional infrastructure.

WASHINGTON, D.C.

Population	3,774,000
Total population growth 1980-89	16.1%
Cost of living index	117
Labor market stress index	120
Fiscal stress index	200
FORTUNE 500 corp. headquarters	8
Unemployment rate	3.0%

The seat of power attracts business. The city's economy has grown more diverse as corporations that work closely with government and many nonprofit organizations have located operations here. At the same time, suburbs in both Maryland and Virginia have developed as independent business centers. But inner-city crime is a problem. So are a tight suburban labor market and overloaded schools. And beware of rising taxes. Its fiscal stress index tops the list.

KEY STATISTICS FOR THE 31 BIGGEST

Making an intelligent decision on where to locate requires getting deep into details. These data were compiled from a number of sources by Moran Stahl & Boyer in close consultation with FORTUNE.

All "A" to "D" ratings are based on MS&B's extensive interviews with existing employers and city officials in the individual cities or, in the case of air quality, on the firm's interpretation of Environmental Protection Agency statistics.

The growth projections for 18- to 24-year-olds were calculated by National Planning Data Corp. The training-capacity rating measures how well prepared each city is to train workers in new tasks.

The SAT scores represent the combined total of math and verbal tests. In some areas students take the ACT test instead, which has a top score of 36 compared with the SAT's 1,600. Suburban SAT scores are generally for the largest suburb.

All statistics on employment base come

CITY	WORK FORCE FACTORS					EMPLOYMENT BASE				
				Average SAT scores		BLUE COLLAR			WHITE COLLAR	
	Change in number of people age 18-24 by 1994	Work ethic rating	Training capacity rating	City	Suburbs	Growth since 1983	Percent of total labor force[1]	High-tech jobs as percent of total[2]	Growth since 1983	Percent of total labor force[2]
ATLANTA	0.7%	B	A	720	888	22.9%	38.0%	1.6%	42.9%	62.0%
BALTIMORE	−8.1%	B	A	754	948	−0.7%	30.0%	4.0%	27.6%	70.0%
BOSTON	−11.4%	C	D	764	929	−3.2%	30.4%	3.0%	23.5%	69.6%
CHICAGO	−9.4%	C	C	13.8	19.4	5.3%	33.3%	4.9%	22.8%	66.7%
CINCINNATI	−9.1%	A	C	867	1,000	11.2%	43.0%	2.7%	31.8%	57.0%
CLEVELAND	−10.4%	B	C	757	935	0.6%	39.8%	3.9%	18.3%	60.2%
COLUMBUS, OHIO	−9.6%	B	C	910	1,026	13.7%	36.4%	3.6%	32.8%	63.6%
DALLAS	−3.1%	B	B	800	929	11.9%	35.5%	5.4%	27.3%	64.5%
DENVER	−7.9%	B	B	16.8	20.2	5.1%	35.8%	2.1%	13.0%	64.2%
DETROIT	−9.6%	C	C	13.0	19.5	10.6%	41.3%	1.1%	26.0%	58.7%
HOUSTON	−10.8%	B	B	864	905	−7.5%	33.3%	1.5%	10.2%	66.7%
KANSAS CITY	−5.1%	A	A	14.6	1,066	9.4%	37.5%	2.7%	23.6%	62.5%
LOS ANGELES	−3.9%	B	C	823	923	7.4%	38.9%	5.1%	21.2%	61.1%
MIAMI	−5.1%	B	A	841	834	5.2%	29.7%	1.5%	20.9%	70.3%
MILWAUKEE	−9.8%	A	B	916	1,005	7.2%	40.4%	4.7%	21.4%	59.6%
MINN./ST. PAUL	−5.4%	A	C	1,002	1,041	13.8%	39.9%	4.9%	25.3%	60.1%
NEW ORLEANS	−13.9%	B	A	988	17.9	−8.0%	32.0%	0.3%	5.1%	68.0%
NEW YORK	−8.2%	C	C	799	1,053	−8.8%	27.0%	1.5%	11.6%	73.0%
NORFOLK, VA.	−5.2%	A	A	815	867	12.9%	34.2%	0.9%	35.2%	65.8%
PHILADELPHIA	−9.5%	B	A	779	967	0.7%	33.3%	4.2%	21.0%	66.7%
PHOENIX	2.3%	B	B	20.5	957	29.0%	37.1%	6.5%	44.4%	62.9%
PITTSBURGH	−13.0%	A	A	839	908	−8.3%	34.8%	2.6%	15.6%	65.2%
PORTLAND, ORE.	−5.3%	B	B	905	950	13.3%	35.6%	10.1%	25.1%	64.4%
SACRAMENTO	−1.7%	B	C	926	911	29.3%	26.0%	0.9%	37.9%	74.0%
SAN ANTONIO	−6.0%	B	B	678	934	4.2%	28.6%	0.7%	24.1%	71.4%
SAN DIEGO	−5.3%	B	C	919	933	23.1%	30.9%	7.4%	43.8%	69.1%
SAN FRANCISCO	−5.9%	B	D	856	889	-2.0%	29.1%	1.9%	13.8%	70.9%
SEATTLE	−2.9%	B	B	944	970	27.7%	38.5%	3.0%	31.0%	61.5%
ST. LOUIS	−7.9%	B	A	764	985	6.3%	39.1%	2.2%	22.1%	60.9%
TAMPA BAY AREA	1.6%	B	A	909	917	19.9%	27.7%	4.0%	38.6%	72.3%
WASHINGTON, D.C.	−4.1%	C	D	715	978	29.4%	18.9%	2.3%	35.2%	81.1%

[1] ACT score. [2] Nonagricultural. [3] Illinois data not comparable to rest of U.S.

from the federal Bureau of Labor Statistics, as does the clerical salaries index. Business-related construction costs are tracked by Marshall's Valuation Guide. Tax rates come from the Bureau of the Census, crime statistics from the Department of Justice. The housing figures measure the cost of a median-price existing home and come from the WEFA Group's Real Estate and Construction Service. Commute times are calculated by MS&B. Airport data, from the Federal Aviation Administration, measure congestion in terms of hours of flight delays rather than numbers of flights, producing a few surprises—New York City, for instance, for all its air traffic, has a low delay experience vs. other major cities. The words "increasing" or "stable" refer to the outlook for airport congestion in the next ten years.

Data aren't always available for an entire urban area, so for Dallas and San Francisco the statistics below omit nearby cities that make them additionally attractive to business. Cost and crime indexes are based on 100 as the average of all U.S. cities. F

REPORTER ASSOCIATE *J. B. Blank*

BUSINESS COSTS			INFRASTRUCTURE			LIVING ENVIRONMENT			
Average clerical salaries index (U.S.=100)	Construction cost index (U.S.=100)	State/local taxes per capita	Airport congestion	Highway conditions rating	Utility capacity rating	Housing costs	Crime incidence index (U.S.=100)	Air quality rating	Average commute time to downtown (minutes)
101	102	$1,281	High, increasing	C	B	$82,440	132	B	25-75
100	117	$1,743	Low, increasing	B	A	$93,462	101	B	25-50
101	142	$1,933	Low, increasing	D	C	$182,393	81	B	45-75
102	123	$1,547	High, stable	C	B	$100,247	N.A.	C	45-90
96	119	$1,413	Low, increasing	B	A	$73,671	63	B	20-35
95	129	$1,413	Low, increasing	A	A	$70,537	73	B	17-26
89	118	$1,413	Low, increasing	B	A	$74,196	87	A	15-35
100	98	$1,291	High, stable	B	A	$94,710	174	C	25-45
100	106	$1,486	High, increasing	B	B	$82,807	105	C	10-35
108	126	$1,705	Low, stable	A	A	$73,580	111	B	15-35
109	101	$1,291	Low, stable	B	A	$64,812	129	B	15-39
101	111	$1,152	Low, increasing	A	A	$74,239	111	B	15-50
117	133	$1,725	High, increasing	D	B	$204,099	107	D	35-75
96	100	$1,271	Low, increasing	C	B	$85,097	193	B	12-40
90	121	$1,731	Low, increasing	A	A	$77,873	82	A	15-25
98	121	$1,716	Low, stable	B	A	$93,223	86	A	17-22
97	103	$1,254	Low, increasing	B	B	$75,221	120	B	15-50
107	160	$2,536	Low, increasing	C	A	$185,541	140	D	50-65
84	110	$1,402	Low, stable	A	A	$104,883	92	A	12-29
99	129	$1,458	Low, increasing	B	A	$115,399	68	C	22-45
91	111	$1,493	Low, increasing	B	B	$91,463	121	C	20-40
98	115	$1,458	Low, stable	A	A	$64,183	49	B	23-38
101	113	$1,434	Low, increasing	B	B	$75,760	142	A	20-40
100	131	$1,725	Low, stable	B	A	$103,253	113	A	30-35
91	94	$1,291	Low, stable	A	A	$73,725	165	A	15-30
102	129	$1,725	Low, stable	C	B	$166,411	115	C	15-50
117	148	$1,725	Low, increasing	D	A	$247,940	102	C	45-50
106	119	$1,589	Low, increasing	B	A	$122,739	130	A	25-50
95	118	$1,152	Low, increasing	A	A	$83,113	87	B	15-25
86	105	$1,271	Low, stable	C	B	$73,991	131	B	30-45
102	118	$2,748	Low, increasing	D	A	$145,409	89	D	15-60

A TIME BOMB FOR U.S. TAXPAYERS

The government guarantees millions of mortgages, bonds, deposits, and student loans. These liabilities, now twice the national debt, are growing fast. So are defaults. ■ *by Robert E. Norton*

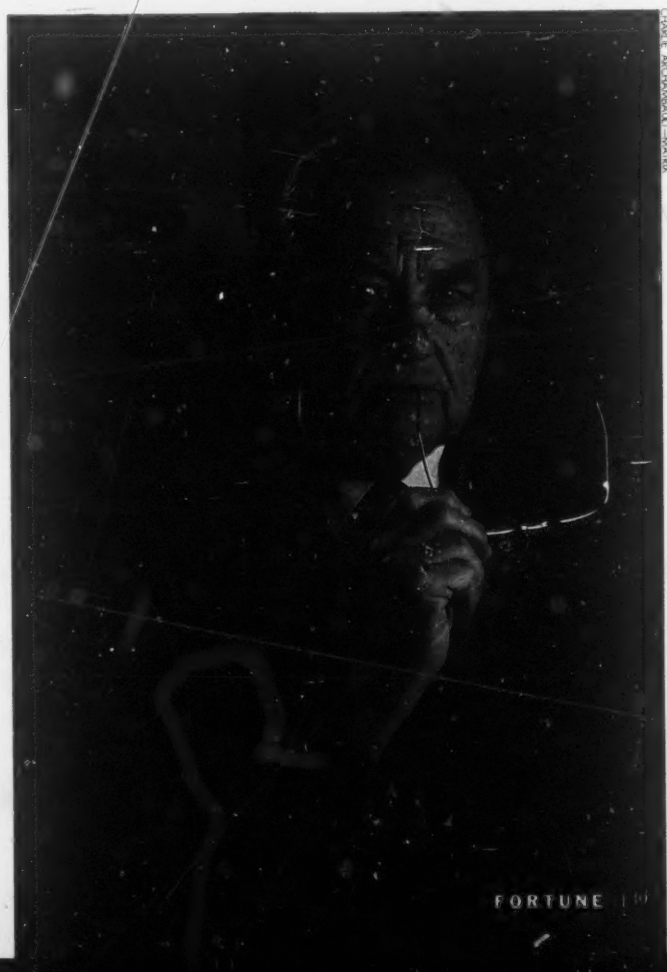
TIRED OF worrying about America's budget deficit? Now you can start worrying about the vast sums that are *not* on the budget. Uncle Sam's off-budget guarantees will climb from $2.1 trillion in 1980 to nearly $5 trillion next year, more than twice the size of the national debt. You can take small comfort in the fact that these are contingent obligations, not actual loans, so taxpayers should have to pick up only a small percentage of that massive tab. Still, for the past few years that percentage has been rising alarmingly.

Between now and 1992, the U.S. government will have to spend at least $20 billion on loan and deposit guarantees that have already gone bad. Assume a less rosy economic scenario than the Bush Administration does and those hidden costs soar. Factor in a serious recession, and you're staring at a ticking time bomb. Warns Texas Democrat J.J. "Jake" Pickle, chairman of the oversight subcommittee of the House Ways and Means Committee: "We surely must accept that these off-budget liabilities can have very sudden and profound on-budget consequences."

That's not a message many folks in Washington want to hear. Not a penny of that $20 billion in losses appears in official budget projections. Indeed, to maintain the pretense that they are hitting the deficit reduction targets set by the Gramm-Rudman-Hollings law, Congress and the White House have been busily conniving to shove even more spending off-budget. That's not only disingenuous, it's dangerous. Remember the S&L mess? That $160 billion disaster crawled out of this same murky swamp of federal credit and loan guarantee programs. Recently there have

UNCLE SAM'S $4.8 TRILLION WORTH OF HIDDEN RISKS

GOVERNMENT GUARANTEES	AMOUNT OUTSTANDING IN 1990 BILLIONS	GROWTH 1980-90
Government-insured deposits	$2,986	100%
Govt. Natl. Mortgage Assn.	$386	330%
Federal Housing Admin.	$345	175%
Fed. National Mortgage	$312	495%
Fed. Home Loan Mtge. Corp.	$302	1,305%
Fed. Home Loan Bank System	$160	335%
Veterans Administration	$134	35%
Student loans	$56	300%
Farm Credit System	$54	-13%
Student Loan Marketing Assn.	$34	1,355%



CHARLIE ARCHAMBAULT—MATRIX

Texas Democrat J. J. Pickle is taking a hard look at off-budget debt.

Uncle Sam once insured this Denver house; now he owns it, along with 50,000 others. Trespassers beware: The FBI is watching.

been a number of smaller fiascos, where poor accounting and bad management combined to cause an off-budget venture to suddenly gush budgetary red ink.

■ The Department of Housing and Urban Development (HUD) insures some $303 billion of mortgages for low- and middle-income people through its Federal Housing Authority (FHA). After ordering reserves to cover $1.2 billion of bad loans last year, the General Accounting Office discovered in late September that the FHA's losses had jumped to $4.2 billion in fiscal 1988. With 50,000 foreclosed homes on its books and the percentage of seriously delinquent mortgages twice as high as ten years ago, the FHA seems certain to transform nearly $5 billion of off-budget guarantees into deeper federal budget deficits over the next few years.

■ The sickest federal direct-loan program is the Farmers Home Administration (FmHA), which lends mortgage money to folks in rural areas. Its outstanding loans peaked at more than $60 billion in the mid-1980s, and by 1987, 63% were in default. Losses over the next several years are expected to reach $20 billion. Since direct loans appear on the budget, the FmHA in the mid-1980s began switching from making loans to individuals to issuing guarantees to private lenders. That way it can stay in business without asking the White House for more money. But a new study by the Government Accounting Office concludes that roughly one-third of these off-budget guaranteed loans will sour in the next few years—a loss rate only slightly lower than the FmHA was experiencing on its direct loans. The potential on-budget cost could reach $1 billion annually.

■ Recently government auditors predicted that the Veterans Administration, which runs a $150 billion mortgage-guarantee program similar to the FHA's, would need a $450 million infusion to offset losses over the next year. Defaults in the guaranteed student loan program, which insures $52 billion in loans, are also running at an estimated 4% annual rate. There's another $2 billion a year that ought to be anticipated in the budget—but isn't.

■ In June the Guardian Bank of Hempstead, Long Island, and an affiliated mortgage company went belly-up. Though only the 120th-largest bank in New York State, Guardian had carved out a position as the country's fifth-biggest issuer of so-called Ginnie Mae securities. These are packages of residential mortgages issued by banks and savings and loans and backed with the "full faith and credit" of the U.S. through the Government National Mortgage Association (hence, "Ginnie Mae"). Of the $360 billion in Ginnie Maes outstanding, Guardian, with assets of just $420 million, had underwritten some $7 billion.

Based on its investigation, the Justice Department alleges that Guardian falsely withheld payment to investors in the mortgage securities and that its owner, Louis Bernstein, engaged in "self-dealing and misapplication of bank resources in funding the growth of an unsafe mortgage company." No indictments have been filed yet. But search warrants have been issued. A senior official at Ginnie Mae tentatively estimates his agency will have to pay between $100 million and $200 million to holders of Guardian-issued securities. A recent audit by Price Waterhouse found that Ginnie Mae has guaranteed securities issued by insolvent S&Ls—in violation of its own rules.

No one is suggesting that all off-budget programs are in trouble. Most analysts believe that Uncle Sam's biggest pool of contingent liability—the bank and savings and loan insurance funds, which guarantee nearly $3 trillion in deposits—is in little danger. Bank earnings and capital, which are the first line of defense against losses, have risen briskly in recent years. As for S&Ls, regulators have demanded that they boost their capital. Says FDIC Chairman William Seidman: "Clearly the system needs better supervision and more capital, but all the trend lines are pretty good." Though a few academics, such as R. Dan Brumbaugh Jr. of Stanford and Robert E. Litan of the Brookings Institution, disagree, even officials at the often skeptical Federal Reserve Board side with Seidman.

THE GIANT Federal National Mortgage Association (Fannie Mae) is another solid citizen. Fannie's job is to make a secondary market in mortgages, either by buying them for its own portfolio or packaging them for sale to other investors. In the early 1980s rocketing interest rates pushed its borrowing costs above the returns on its mortgage portfolio, and Fannie Mae nearly went under. Today the company boasts a dramatically improved balance sheet and turns a healthy profit. David O. Maxwell, who took over as Fannie's chief executive in 1981

REPORTER ASSOCIATE *Jennifer Reese*

LOUIS PSHOTOS—MARBI ©

and engineered the transformation, claims it would now take "a catastrophe the likes of which was not even seen in the 1930s" to turn Fannie into a burden on taxpayers.

Nevertheless, what many policy analysts find disturbing is the sheer speed at which Fannie Mae, the Federal Home Loan Mortgage Corp. (Freddie Mac, yet another guarantor of residential mortgages), the Student Loan Marketing Assn. (Sallie Mae), and the other outfits known as "government-sponsored enterprises" (GSEs) are piling up liabilities. Total GSE obligations stand at roughly $800 million. During the past decade that debt has risen at an annual average rate of 21%—nearly twice as fast as on-budget federal borrowing.

This Long Island bank was the fifth-biggest issuer of Ginnie Maes in the U.S. Its fall will cost the government at least $100 million.

ANOTHER long-term worry: Do the GSEs have enough capital? Fannie Mae especially operates on a thin base. Its current capital-to-asset ratio is respectable, at more than 5%. But HUD allows Fannie to count subordinated debt as capital, even though this is borrowed money carrying the government's implicit guarantee rather than stockholders' equity. Fannie's common equity to assets is only 2.2%, much less than the norm for banks and S&Ls. The level of capital, however, has doubled over the past four years, and Maxwell is taking steps to boost it further.

You will probably not be pleased to learn that Fannie Mae is regulated by the ill-starred Department of Housing and Urban Development. Recent legislation ordained that Freddie Mac will also report to HUD. Sallie Mae has no financial regulator at all. Last spring Robert D. Reischauer, director of the Congressional Budget Office, warned Congress, "Continuing the current policy of not measuring and controlling the risks of GSEs could lead to large, unanticipated federal outlays."

Though the U.S. government does not officially guarantee the debt of these quasi-private organizations, the markets have always assumed that Uncle Sam would come to the rescue in a crisis. Any doubts were resolved in 1987, when a $4 billion federal bailout saved a GSE known as the Farm Credit System.

So what should Washington do about off-budget debt? For one thing the government should not make the situation worse. Consider what some lawmakers propose for the FHA. That agency currently allows borrowers to put down less than 5% for a mortgage and also pays some closing costs. So the total can exceed the price of the house. That's fine as long as prices are going up. But when the housing market falls, or even slows, look out! Say that a homeowner with a $100,000 mortgage should have to sell for $102,000 two years after buying the house. Typical closing costs of about $7,650 would leave him with only $94,350 in cash. The hapless homeowner, whose mortgage has barely amortized, would be forced to come up with an extra $4,564 to pay it off. He would be sorely tempted to default, which is just what has been happening at the FHA.

Enter Senators Alfonse M. D'Amato (R-New York) and Alan Cranston (D-California) with a cure that would surely worsen the disease. They propose raising the maximum mortgage the FHA can insure, from $101,250 to 95% of the median house price in an area. This would permit loans as high as $200,000 in some posh places. The Senators would also further reduce the minimum down payment. Quips Gregory T. Barmore, chief executive of General Electric's mortgage insurance subsidiary: "It's hard to see how you make a house more affordable by lending someone more money than he can pay back."

WOULDN'T IT MAKE more sense to get the government out of the money-lending business? If Congress believes deserving citizens cannot buy houses for lack of a down payment, giving them the money as a check or tax credit would surely be more efficient than encouraging—and guaranteeing—ever larger mortgages that will lead to higher defaults. Loans already on the government's books could be sold off to private financial institutions, thereby limiting taxpayers' future risks and establishing the true value of these holdings.

As for the GSEs, Wall Street economist Henry Kaufman speaks for many businessmen when he advocates abolishing their current ambiguous status. Says he: "Take the name federal away, take the name of government away, and let them flourish or perish." Now that a nationwide market exists for mortgages, and such corporations as Citicorp, General Motors, and General Electric are expanding into the business, creditworthy home buyers should be able to borrow even if the Mae and Mac gang were fully privatized. Mortgage rates on lower-income housing might rise slightly—currently smaller mortgages that flow through the GSEs carry interest rates one-

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eighth to one-half a percentage point below those on larger loans. But here again, if a subsidy is meant to lower the borrowing costs, why not dole it out as a tax credit instead of masking that social cost with hundreds of billions in debt guarantees?

Whatever its philosophical merits, however, privatization is politically a dead duck. The Reagan Administration pushed the idea hard in its early years but failed to make headway against the powerful business and congressional constituencies that like the status quo. George Bush would surely do no better.

Happily, there are a host of housekeeping measures that could make the off-budget mess less messy. For starters, all off-budget programs should be forced to meet uniform accounting and auditing standards. At the Farmers Home Administration, loans granted in one year sometimes failed to show up on the following year's books. At HUD the General Accounting Office uncovered what one report calls "very serious internal control deficiencies." While bankers check to see whether a borrower has previously defaulted on a loan to them before extending another, the government, astonishingly, often does not.

In addition, Congress and the Administration need to stop sweeping losses from the government's loan programs under the rug. How? By changing the accounting treatment of these programs so that the costs of loan losses are estimated as the loans go bad, and money is set aside to cover them. That's something banks and other private sector lenders have long been required to do.

EARLIER IN THE YEAR, Congress ordered the Treasury Department to survey the risks of the GSEs and asked the General Accounting Office to study their capital adequacy. Now Texas's Jake Pickle is holding follow-up hearings. When the results of these studies are in next year, the best reform might be one suggested by the Congressional Budget Office: Grant a single department, such as the Treasury, the power not only to collect and analyze information about the risks of the GSEs but also to issue and enforce regulations to control those risks.

Congress should also stop propagating new GSEs, which are of increasingly dubious value. The latest, the Federal Agricultural Mortgage Corp. (Farmer Mac), will start packaging and selling farm loans next year, much the same way Fannie and Freddie bundle mortgages. The College Construction Loan Insurance Association (Connie Lee) will guarantee bonds issued by colleges and universities, which it estimates is a $60 billion market. Some legislators also want to boost lending to entrepreneurs by creating an agency that would buy and package small-business loans. Though it's still looking for supporters, the Venture Enhancement and Loan Development Administration for Smaller Undercapitalized Enterprises already boasts the requisite nickname—"Velda Sue."

New off-budget corporations are to ensure that the rising costs of paying for previous off-budget commitments stay, you guessed it, off-budget.

Could it be that Washington's budget accounting has gotten so creative that nobody can keep track of what's in or out of the budget? Sometimes you wonder. In the latest wrinkle Congress and the White House are creating new off-budget corporations whose sole purpose is to ensure that the rising costs of paying for previous off-budget commitments stay, you guessed it, off-budget. The first, called simply the Financing Corp., was formed in 1987 to raise $10.8 billion for the initial bailout of the savings and loans—back in the days when some argued that no more money would be required. A successor, the Resolution Funding Corp., was set up as part of this year's S&L bailout and authorized to raise $30 billion in off-budget borrowings.

To be fair, Congress and the White House did finally drop some of those S&L bailout outlays into the fiscal 1989 budget. But they did so only *after* they had already met last fall's Gramm-Rudman target. Under the Gramm-Rudman rules, of course, once you jiggle the numbers to meet your forecast for any given year, it doesn't matter how big the actual deficit turns out. This sort of flimflammery—and the growing reliance on off-budget commitments it generated—is one of the sorrier legacies of the 1980s. Neither should continue into the 1990s. F

WHO'S FUELING THE FAX FRENZY

Small businesses are mad for these miracle machines. The industry's hottest companies spotted the trend while competitors were still chasing megacustomers. ■ *by Frederick H. Katayama*

IT'S THE BIGGEST THING since the PC. Businesses large and small, from Pillsbury in Minneapolis to Pizza Delight in Plainview, New York, use facsimile machines for everything from receiving orders to sending out takeover notices. Faxy ladies who want to disrobe for *Playboy* are sending their portfolios to Hef over the wire. Fax cat Donald Trump has a machine on his yacht and another beneath the seat of his $80,000 Trumpmobile. "What's your fax number?" has become part of standard business dialogue. The White House hot line to Moscow isn't a red phone; since 1984 it's been—you guessed it.

Sales of fax machines this year are expected to total 1.4 million units worth some $2 billion. That represents a 22-fold increase over the past five years. Dataquest, a San Jose, California, market research firm, expects volume to reach 3.2 million units in 1993. Result: a feeding frenzy of faxmakers. Some 25 manufacturers, offering over 60 brand names, have rushed into the American market. Six years ago there were just seven makers and nine brands.

Most are trying to catch the fast growth at the low end of the market, which includes machines selling at list prices from $2,500 to $899 (with discounts, as little as $390). The 695,000 such units sold last year accounted for over half of all sales; by 1992, says Bis Cap International, a market research firm in Norwell, Massachusetts, they will command about 70%. The industry leaders, Sharp and Murata, got to the top by focusing on the bottom.

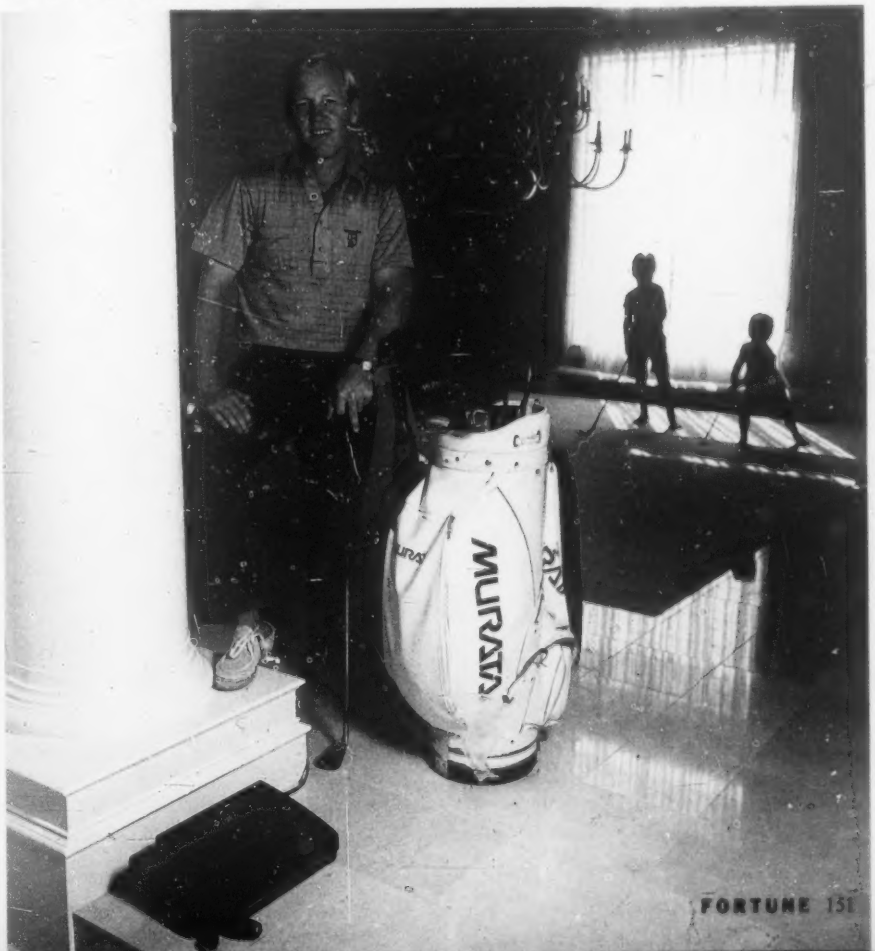
The surge in low-end faxes reflects roaring demand among small and medium-size businesses. Reliable and simple to use, the machines have become a powerful sales tool and more. Companies are saving money by doing away with messengers and overnight express mail service—Manhattan's glittery Russian Tea Room recouped the cost of its $2,000 fax machine in seven months with savings on banquet contracts, press releases, and menu changes. The machines can also double as inexpensive copiers.

For many small businesses a fax is a necessity. Mike Lee, who owns that pizzeria in Plainview, bought his because "all the delis in the neighborhood had one and customers assumed we did too." Says Casey Dworkin, general manager of Personal Technology Research in Waltham, Massachusetts: "If you're a small business today and you don't have a fax, you're nothing." The next growth spurt will come in the home office market, which analysts expect to be worth $780 million by 1995.

The most basic low-end machines, or "personal faxes," cost less than $1,500, transmit a page in about 30 seconds, and print on heat-sensitive thermal paper that spools out from a roll. More elaborate low-end units cost up to $2,500. They automatically cut documents as they print out, and offer memories that can hold incoming in-

REPORTER ASSOCIATE *Sara Hammes*

Murata's Michael Franz, at his new home in Plano, Texas, made his upstart company a star.



PHOTOGRAPH BY STEVEN PUMPHREY

DAN FORD CONSOLIDATED PICTURE GROUP

Fast-food fax fact: Houston lawyer Joseph Stiles faxes his lunch orders to McDonald's.

formation for later printing if they run out of paper. The low-end machines are not designed to handle more than ten pages or so a day—they lack such features as large paper rolls and fans for cooling during constant operation. High-end machines, costing as much as $12,500, can transmit in as little as ten seconds and run continuously, print on ordinary paper, simultaneously copy and transmit, and "broadcast" to as many as 200 destinations sequentially. Some let users punch in passwords to keep documents confidential.

LIKE THE TV AND VCR, the fax is another Western invention the U.S. surrendered to Japan. Xerox produced the world's first commercially successful fax in 1970. Xerox, Burroughs, Exxon Office Systems, and Harris/3M (now Lanier Worldwide) dominated the market in the 1970s. But then came the PC and the accompanying vision of a paperless office. Strategic planners decided that word processing was the wave of the future. Exxon quit, and Burroughs sold its business to Fujitsu. Of the survivors, Xerox makes its machines in Japan through its Fuji Xerox joint venture, and Lanier buys its from Japan and Korea.

In corporate Japan, by contrast, faxes had a clear purpose: They eliminated the chore of transliterating the complex language into Roman characters and keyboarding them into a Telex machine. By the late 1970s faxes were as common as computers, and companies such as Ricoh and the Matsushita group (maker of the Panafax and Panasonic brands) were swarming into the U.S. market with machines that were more advanced and cheaper than American-made ones.

Sharp and Murata were the earliest to court small and midsize businesses. "Everyone else was fighting for FORTUNE 500 clients then," recalls Sharp general manager Allen Mahmarian. Sharp invaded the low end of the market in 1984 with a no-frills $2,000 machine, less than half the price of anything else available. The company distributed the FO-1800 through its office dealer network, which meant a mobilization of 2,000 salesmen. Other companies used expensive direct-sales forces and could afford a battalion of 90 troops at most. Says Mahmarian: "We had a minimal product lineup, but the right distribution channel." Sharp was also first to establish a home office products division to sell faxes and other merchandise through retailers. By last year it had leaped past Ricoh, Canon, and Pitney Bowes to No. 1, grabbing 21% of the entire market (see chart, last page).

Upstart Murata was the most aggressive and nimble of all. Says Dataquest analyst Ken Landoline: "Murata is the success story everybody uses as a model." In the past three years Murata has jackrabbited from No. 10 to No. 2. Last year it earned $14 million on sales of $264 million.

THE BOYISH Michael Franz set up the U.S. subsidiary of Murata Machinery of Kyoto (revenues: $1.3 billion) in Plano, Texas, in 1982 with a co-founder and one employee. Unlike Sharp and Canon, Murata was a single-product outfit with an unknown name in the U.S. Franz, then 29, launched an advertising blitz, spending $7.5 million from 1985 to 1988, vs. $6.3 million for Sharp. Last year Murata brought out the model M1200 at $899, undercutting the competition by some $600. Canon fired back with the comparably priced FaxPhone 8, but it took 45 seconds to transmit a page, vs. 18 for the M1200, and didn't sell well. The M1200's price dropped to as low as $498 in discount outlets. Sales surpassed 100,000 units last November, and the M1200 became the industry's all-time best-seller.

The battle at the bottom will grow more intense. New competitors, among them companies that previously stuck to the upper reaches, are driving prices lower. Canon began moving downstream in 1986 and now has a solid position in that market. Matsushita added five low-end units to its single Panasonic model last November, and Ricoh launched two personal fax models in June. Fujitsu, which fell from fifth place in 1986 to 11th, is thinking about joining the fray. And then there are the South Koreans. Right now their machines are no cheaper than those of Japanese rivals because the expensive chips and thermal printer heads come from Japan. But when Daewoo, Lucky-Goldstar, and Samsung start building their own next year, analysts say, they could drive the lowest prices down to around $300.

To hedge against the price wars, Sharp and Murata are trying to move upstream. The margins are healthier—35% to 40% for mid-range and upper-level machines, vs. 20% and falling for the plain-vanilla models. Moreover, doing so could create a relatively secure market for their low-end machines. Industry experts expect that big corporations will increasingly be buying these faxes. Since such companies are more interested in features and service than price, the environment should be more benign than the small-business market for the makers that get in the door.

continued

LIFE IN THE FAX LANE

COMPANY	MARKET SHARE
Xerox	30%
Exxon	24%
Burroughs	17%
3M	14%
Matsushita	6%

1982

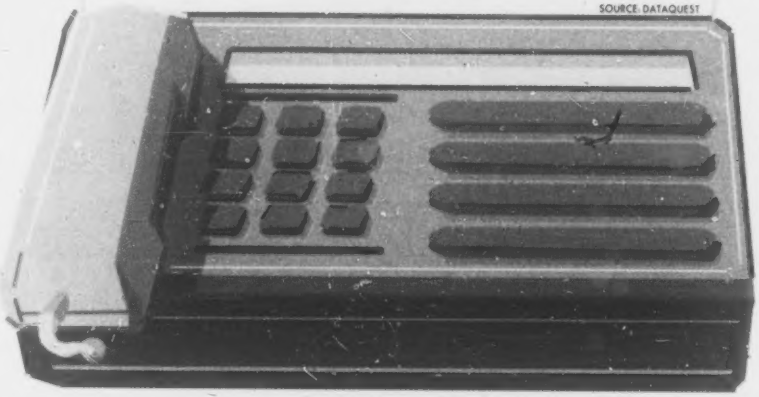
COMPANY	MARKET SHARE
Ricoh	16%
Canon	13%
Pitney Bowes	12%
Sharp	10%
Fujitsu	7%

1986

COMPANY	MARKET SHARE
Sharp	21%
Murata	15%
Canon	11%
Ricoh	10%
Pitney Bowes	6%

1988

SOURCE: DATAQUEST



Companies will outfit their field reps with faxes, and managers will want their own. Some analysts anticipate a new generation of "fax potatoes," chair-rooted workers who forgo a long walk down the hall and fax the document instead. A prototype is Geoffrey Fenton, a manager at Baxter Health Care's office park in Deerfield, Illinois, who used to hike nearly half a mile from building No. 2 to building No. 6 to deliver documents but now faxes them instead.

Scaling the corporate heights won't be easy. Says Sharp assistant general manager Steve Bachstetter: "You don't walk into GM and knock out your competitor. They've had business relationships with vendors for years." But Sharp and Murata claim their top-of-the-line machines, selling for up to $5,000, offer features that cost much more from other manufacturers. Bachstetter says that Sharp has netted over 200 big corporate accounts, among them ITT and Hershey Foods, in the year since it began its high-end mission.

Murata will soon start distributing through computer dealers to boost sales of the fancier machines. To make corporations familiar with its name, the company is spending more than $15 million this fiscal year on consumer and institutional advertising. It is also sniffing around for an acquisition to diversify its product lineup. Franz won't elaborate, but some analysts think he should seek a high-end fax company to strengthen Murata's weakest spot.

FAXMAKERS HOPE to hold their prices and keep margins from eroding further by adding more features. Automatic document feeders have surfaced on the latest personal fax entries, such as Murata's M900 and Sharp's UX-100. Some high-end features could eventually filter down. Plain paper will replace the curly, waxy thermal paper in one to three years. When the digital telecommunications network known as ISDN becomes available nationwide in the mid-1990s, new fax machines will reduce transmission time to five seconds per page, vs. the current ten to 40 seconds, and deliver much higher resolution. Color faxes? One small company, StarSignal of Campbell, California, is selling them at $26,000, but the big manufacturers don't see a large enough market to justify making their own machines.

Analysts predict that only ten or so of the current 25 manufacturers will be left after a brutal shootout over the next few years. The likely winners: companies such as Canon, Ricoh, Sharp, and Matsushita, which are strong on both ends of the market, and Murata, because it is so strong at the bottom and so nimble. Some niche players should survive too—for example, Pitney Bowes, which specializes in renting expensive machines. Canon, the favorite of many analysts, is heavily armed with a well-balanced roster of products, and its parent company spends more than anyone else on R&D, some 10% of sales, vs. about 5% on average for the others. Among the first casualties will be marketers that buy cheap boxes from the Far East, sell them under their own names, and offer no service.

Who else is likely to win and lose? Phone companies reaped an estimated $2.3 billion last year in revenues from fax transmissions—more than faxmakers make from making faxes—and the business has nowhere to go but up. Conversely, the growth of fax has decimated Western Union's telex business, leaving it increasingly dependent on correspondence with countries that haven't yet succumbed to the fax craze. (That's a shrinking universe too. Growth is hot overseas, especially in Europe—the French have a new verb, *faxer*.) Even Western Union marketing vice president Brian Gaylord has equipped his study with a fax machine—it joins his PC, printer, answering machine, and mobile telephone. Says gadget buff Gaylord: "People can communicate to me by fax and electronic mail. And they can even phone me."

Messenger services and couriers are also smarting. Choice Courier, one of the nation's largest messenger firms, lost about $3 million, or about 10% of revenues, last year to fax. Federal Express resigns itself to giving up about 20,000 documents—or roughly $200,000—to facsimiles each day. Says Federal Express spokesman Dan Copp: "We can't compete with fax because it delivers within minutes."

DIRECT MARKETERS are winners—at least for now. Unsolicited messages account for about 1% of all fax transactions today and could grow as faxes invade more homes and firms. Purveyors like Mr. Fax of Irvine, California, blitz machines across the country with ads and offer freebies to recipients who provide fax numbers of other companies. But Connecticut and Maryland have banned junk fax solicitations, and similar bills are pending in 21 state legislatures. A congressional subcommittee has passed a bill authorizing the FCC to set up a clearinghouse to compile lists of people who would object to receiving junk fax. Advertisers who ignore the list would be penalized.

As costs come down, people will inevitably find more reasons for buying fax machines. In his prefax days, George Grillo, East Coast sales director of the Applause toy company, would call his favorite Chinese takeout in the New York suburb of Dix Hills for two orders of item No. 1, shrimp eggrolls. But the attendant, who speaks little English, would always misinterpret that to mean one of No. 1 and one of No. 2, pork eggrolls. Grillo now faxes the restaurant a copy of the menu with a big circle over No. 1. He can count on crustaceans every time. F